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Congenital Heart Disease

ELECTIVE BALLOON PULMONARY VALVULOPLASTY IN THE NEWBORN WITH TETRALOGY OF FALLOT

Poster Contributions
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Background: In tetralogy of Fallot (TOF), the risk of cyanotic spells can lead to emergency systemic-pulmonary shunt. The development of the pulmonary artery and the onset of cyanotic spells are conditioned by the volume of the trans-valvular flow.

Methods: We conducted a retrospective study to determine whether elective primary pulmonary valvuloplasty (EPPV) in the neonate 1) allows a better development of the pulmonary artery; 2) reduces the risk of cyanotic spells or the use of emergency surgery; 3) increase the possibilities of conservative surgery of the pulmonary valve. TOF who received EPPV within the first month of live were compared to an observational group (OBS).

Results: There were 48 patients (19 EPPV and 29 OBS) with a trend for lower birth O2-saturation in EPPV (89±5.7% vs 94±5.9%; p=0.07). Pulmonary valve z-score was comparable (-2.17±1.43 vs -1.87±1.54; p=0.513) as well as Nakata index (120.9±41.6 vs 147.4±50.1 mm2/m2; p=0.62). Pulmonary valve z-score remained comparable at surgery (-1.63±1.83 vs -1.09±1.75; p=0.603) and the Nakata index increased equally by 45.1±97.8 vs 18.6±56.8; p=0.293). Cyanotic spells and palliative shunts occurred equally in both groups (3 vs 2; p=0.372, and 1 vs 1; p=1.0, respectively). The need for trans-annular patch was higher in EPPV however (78.9 % vs 34.5%; p=0.03).

Conclusion: Despite appropriate growth of the pulmonary arteries following neonatal EPPV in TOF, there was no significant decrease of cyanotic spells, or the need for transannular patch.